LAZY SUSAN

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

BACKGROUND OF THE INVENTION

[0003] The present invention relates to Lazy Susan and carousel type storage devices. More specifically, the present invention relates to Lazy Susan and carousel type storage devices made from wood.

[0004] Lazy Susans and carousels have been known in the prior art for decades, and turntables of one kind or another have probably existed for centuries. More recently, Lazy Susan and carousel type products have seen increased use in applications like kitchen cabinets. This trend results, in part, from improvements in the manufacture and design of these products that has focused mainly on the ease of installation and the functionality of the shelves for holding stored goods.

[0005] To differentiate, both Lazy Susans and carousels are turntable type products, with Lazy Susans typically known for having a shelf area that is suitable for holding a number of sundry items. It may be installed within a cabinet thus allowing goods that are located towards the rear of the Lazy Susan shelf to be rotatable to the front area of the cabinet so that they may be accessed by a user. Lazy Susans may comprise single

shelves or multiple shelves. The mounting of the Lazy Susan assembly may be as simple as placement on the interior shelf of the cabinet, or in other installations, the Lazy Susan shelves may be mounted singly or in multiples onto a pole, the pole then being mountable within the cabinet.

[0006] Further, Lazy Susans may also include other characteristics, where some products have shelves that turn with the pole, or where the shelves may turn independent of the pole. In any event, the main functionality of the Lazy Susan is to provide ease in the storage and accessing of the small and medium sized items that are typically found in a kitchen or a bathroom, the usual, although not exclusive, places where Lazy Susan products are installed. The shelves are formed or made in a way to accommodate the storage function by providing an outer rim that extends above the flat surface area of the shelf. In this way, the items stored on the shelf are retained thereon and will not slide off the shelf while it is being rotated.

[0007] In contrast, carousels are turntable type products that may be very similar to Lazy Susans, but at times they may be directed towards very specific applications. For instance, carousels have been used for the storage of numbers of fasteners such as screws or bolts, or they have been employed for holding various types of spices. In these types of applications, the carousel is provided with customized containers that may or may not be attached directly to the base of the carousel. Functionally, the carousel works in the same way as the Lazy Susan in that it is rotatable so that the items being stored can be presented in an efficient way to the user.

[0008] Carousels have many applications and can be found in the kitchen and bath areas like the Lazy Susans, but they can also be employed in other areas such as outdoor patios, garages, retail stores, offices, schools, basically just about anywhere there is a need for the storage of a number of small items.

[0009] Both the Lazy Susans and the carousels can be fabricated from metal, plastic or wood components. The selection is typically based on factors such as costs, intricacies of the final design, and the market or end-user to which the product is being directed. In most cases, wood is viewed as being a premium selection since it usually requires more work to form it and finish into the desired end product, sometimes with an inefficient use of the raw materials.

[0010] Wooden Lazy Susan and carousel products are known in the prior art. These products are generally, as suggested above, premium products where the appearance of the wood is quite often considered an important feature of the finished item. Obviously such products are priced in accordance with the quality that is presented, and also in accordance with the costs associated with the raw materials and fabrication process.

[0011] One drawback to the wooden Lazy Susans and carousels of the prior art is that many times these are actually formed from one piece of solid wood. This is done by cutting out a round blank from a larger piece of wood stock, necessitating in some cases the usage of a very significantly sized piece of flat lumber. Additionally, the thickness of

the wood stock has to be substantial enough to allow for the routing out of the interior portion of the Lazy Susan or carousel to provide the rim. There is one product known in the prior art where the solid wood blank is left essentially flat and a rim is fabricated from pieces of the same wood material. While this method does indeed achieve some economies with respect to the conservation of the raw material, it necessarily requires a great deal of additional handling and working to get to the final result.

[0012] In another example of the prior art, Lazy Susans or carousels are made from wood stock that is formed by gluing together pieces of compatible wood members in order to make up a suitably sized blank that can be used to form the product as described above. Sometimes these may be termed "butcher block" type products.

[0013] In the prior art, the usage of a solid blank in the form of solid wood stock or the "butcher block" type stock is predicated upon the need to have some wood to work so as to achieve a rim and any other features, such as divided sections on the shelf, or a hub rim around a centered through-hole. The usage of a wood stock other than these types has not been known in the prior art ostensibly because of the impossibility, for instance, in using something like a plywood for this purpose. As one might appreciate, routing a plywood blank would result in a totally unacceptable end product. Breaking down the outer laminations of the plywood would reveal the interior construction of the laminated plywood. While similar to the "butcher block" type stock in that both are laminates, the plywood interior is comprised of inferior woods and routing would not produce an acceptable or usable surface for a Lazy Susan or carousel shelf.

[0014] The applicant also notes his pending application that relates to wooden Lazy Susan type products. In this instance, the wooden Lazy Susan may be fabricated from the solid wood blanks or the "butcher block" blanks, however the rim is actually a metal fence, with aluminum strips, that is affixed close to the outer edge of the shelf. The fence takes the place of, or it may augment, the rim formed from the wood blank and it may include wood veneer strips that are "woven" into the fence to suggest the continuation of the wood look.

[0015] Therefore, there has remained the longstanding problem of inefficiencies in the formation of wood Lazy Susans and carousel products. The usage of a wooden blank that must be routed out to form a feature that comprises a relatively small part of the overall product requires the wastage of a great deal of wood material. This waste not only increases the cost of the raw materials consumed but it also requires the usage of a great deal of labor to achieve the desired result. Lastly, another aspect of the prior art is the inefficiencies associated with the need to transport a great deal of bulk when dealing with a fully formed Lazy Susan or carousel. When prepared in the manner of the prior art, such products consume a lot of empty space in packaging and in shipment by virtue of the space that is allotted between the surface of the shelf and the top of the rim. In some cases, nearly twice as much volume is required for packaging and shipping purposes as would be the case if the thickness of the shelf alone was involved.

SUMMARY OF THE INVENTION

[0016] A turntable in accordance with the present invention is comprised of plywood construction. More particularly, the shelf of the turntable comprises a plywood stock that has been cut into a desired diameter blank. A rim is formed from plywood strips that have been bent in accordance with the teachings of the present invention, and which are sized compatibly for installation onto the plywood blank. Installation is completed by affixing the aforesaid rims to the plywood blank.

[0017] It is also a part of the present invention to provide for plywood rims that are segmented and that can be shipped separately from the plywood blank. In accordance therefore, the rims may be preformed into the appropriate arc shape which may comprise a segment of the total perimeter of the plywood blank; a complement of such rim parts being provided so as to complete the rim for the turntable.

[0018] The present invention also comprises a plywood rim that is attached to the top of the plywood blank, or in alternate embodiments, to the side of the plywood blanks.

[0019] It is an object of the present invention to provide a low cost turntable that can be manufactured easily and from materials not usually associated with turntables of the type discussed herein.

[0020] It is also an object of the present invention to provide a turntable that can be shipped more efficiently than the prior art.

[0021] It is also an object of the present invention to provide a turntable that can be assembled in the field.

[0022] These and other features and objects of the present invention are discussed in more detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] FIG. 1 shows a top plan view of a full round turntable of the present invention.

[0024] FIG. 2 shows a side cross-sectional view of the turntable of FIG. 1.

[0025] FIG. 3 shows a top plan view of a kidney shaped turntable of the present invention.

[0026] FIG. 4 shows a side cross-sectional view of the turntable of FIG 3.

[0027] FIG. 5 shows a portion of a turntable of the present invention, specifically an embodiment in which the rim is attached to the edge of the plywood blank.

[0028] FIG. 6 shows a portion of a turntable of the present invention, specifically another embodiment in which the rim is attached to the edge of the plywood blank.

[0029] FIG. 7 shows a portion of a turntable of the present invention, specifically an embodiment in which the rim is attached to the top of the plywood blank.

[0030] FIG. 8 shows a portion of the turntable of FIG. 7 employing a wood dowel for fastening the rim to the plywood blank.

[0031] FIG. 9 shows a portion of the turntable of FIG. 7 employing a screw for fastening the rim to the plywood blank.

[0032] FIG. 10 shows a portion of the turntable of FIG. 7, in particular, an alternate means for joining segments of the rim together.

DETAILED DESCRIPTION OF THE INVENTION

[0033] A turntable shelf of the present invention is shown in FIGS. 1 and 2 where a full round version of a turntable shelf **10** includes a rim **12** and center hole **14** in the middle of shelf **16.** The rim **12** further includes rim joint(s) **18**.

[0034] Another version of the present invention is shown in FIGS. 3 and 4 where the pie-cut turntable shelf **20** includes rim **22** and a center hole in the middle of shelf **26**. Again, the rim is segmented as indicated by rim joint(s) **28**. In this version, however, there is a pie-cut portion **30** that is a trapezoidal shaped section that has been removed from what would otherwise be a full round version of a turntable shelf.

[0035] As may be appreciated, the two versions described above relate to shelves that may be used in carousel type applications or in Lazy Susan applications. The way the shelf is mounted differs between the two applications, however this distinction is not important to the practice of the present invention that relates to the construction of the shelf itself. For this reason, the shelves are not shown as mounted in any particular way.

[0036] Additionally, the two versions described display the most common of the types of turntable shelves. The full round may be used in settings where it is surface mounted on a table or a counter, and it also may do service where it is completely enclosed within a cabinet. In contrast, the kidney shaped turntable shelf is typically used within a cabinet, and specifically a corner cabinet, where it is sectioned as shown so as to conform to the ninety-degree angle that is found in a corner cabinet application. In some cases, the turntable shelf may sit on similarly shaped shelves within the cabinet or it might be simultaneously attached to the backside of the cabinet door and mounted onto a pole for a Lazy Susan type installation. In either event, the versions are meant to be illustrative of the various applications to which the present invention may be directed and are not meant to be limiting in any way. Other applications of the turntable shelves of the present invention certainly exist beyond those shown as examples.

[0037] Turning now to FIG. 5, a portion of a turntable is shown where the rim and the shelf meet and are affixed together. The method of fastening will be discussed in further detail below. Specifically, the drawing shows the turntable portion **40** with rim portion **42** and shelf portion **44**. In this drawing, the junction of the rim portion and the shelf

portion is shown as the side joint **46**. In this embodiment, the sections of the two portions that meet at the side joint **46** are glued and this is the means for fastening the rim portion to the shelf portion.

[0038] Similarly in FIG. 6, the rim portion **42(a)** and the shelf portion **44(a)** of turntable portion **40(a)** are shown as meeting together at side joint **46(a)**. Again, the sections of the two portions that meet at the side joint **46(a)** are glued together. In this instance though, the two portions are shaped to increase the amount of the surface area contact at the side joint **46(a)** and gives the glued joint additional mechanical advantage.

[0039] Turning now to FIG. 7, the turntable portion **40(b)** is shown with rim portion **42(b)** and shelf portion **44(b)**. In this instance, the top joint **46(b)** is formed when the bottom of the rim portion **42(b)** meets a top section of shelf portion **44(b)**. This top mounted orientation of the present invention is the preferred embodiment for the turntable.

[0040] Additionally, two different fastening methods are disclosed in FIGS. 8 and 9 that may be used independently from the glued versions discussed above or in conjunction with them. For instance, in FIG. 8 the turntable portion **40(c)** is shown with rim portion **42(c)** and shelf portion **44(c)**. At the top joint **46(c)** there is a dowel **48** that extends from the rim portion **42(c)** into the shelf portion **44(c)**. This is the preferred fastening method for the product. While the use of wood doweling is well known in the field of wood manufacturing as a method for fastening furniture parts together, it is believed that this is

the first time that the technique has been applied to the fastening of a rim to a blank for a turntable type product.

[0041] FIG. 9 teaches a similar approach where the turntable portion **40(d)** again includes the rim portion **42(d)** and shelf portion **44(d)** and they meet at top joint **46(d)** in the top mount orientation. In this instance, however, wood screw **50** is provided and secures the rim portion **42(d)** to the shelf portion **44(d)**.

[0042] FIG. 10 shows another variation in the way that rim portion may be joined. In this instance, the segments of the rim portion **42(e)** meet at a lap type joint **46(e)** which adds to the integrity of joining the segments. This method will also prevent the segments from separating, however slightly, as might be the case when they are butted together. To fix the segments in this position, they are secured by screws **52**.

[0043] In the preferred embodiment, the rim is top mounted to the shelf and the two are wood doweled together, typically with some glue as added fastening advantage. In this mode, the presentation of the plywood surfaces generally show the veneer layers of the plywood laminates. Where the plywood has been cut, such as on the edges of the blank that forms the shelf, or on the top and bottom edges of the rim, the lamination layers are exposed. However, by sanding these surfaces and finishing them with the same treatments as the rest of the wood surfaces, the laminated appearance is muted somewhat and tends to blend into the overall cosmetics of the turntable. While it is true that the side jointed versions of the turntable embodiment mask the overt appearance of the

laminations on the edge of the shelf, and these approaches are recommended when this result is desired, the methods for fabricating the turntable product in this fashion are less desired than the methodology employed for the top joint version(s). Generally, the side joint versions and the top joint versions will be considered to apply equally with respect to the following discussions relating to the manufacturing and assembly of the turntable itself.

[0044] As noted in the drawings, the rim(s) are segmented, meaning that they are supplied as a number of component pieces and assembled to make up the completed rim in the completed turntable. Segmented rims are the preferred embodiment for the practice of the present invention, although it is understood that one skilled in the art could construct one-piece rims and use these instead. Doing so would impair some, but not all of the benefits of the invention as will be set forth below. The rim segments are, in the case of the full round turntable embodiment, preferentially made to approximate 120° sections of the perimeter or circumference of the shelf. In this fashion, three pieces can be installed onto the shelf to form up a 360° rim. It is possible to use shorter rim segments without detracting from the essential features of the teachings herein.

[0045] In the case of the kidney shaped turntable, the rim is again segmented however depending on the architecture of the pie-cut section, the segments may vary from the preferred 120° approximate sizing. In addition, the rim segment that is formed up to match the shape of the perimeter of the pie-cut section will out of necessity vary from the typical length of a 120° segment.

[0046] No matter which approach is taken with respect to the sizing and shaping of the rim segments, the usage of segments allows the rim components to be packaged much more efficiently than would be the case if one-piece rims were used for the various embodiments. This is an important consideration since unlike the prior art, the usage of a flat blank to form the shelf, and then the usage of segmented rims that can be assembled onto the shelf rather than to be require to form the rims there from, allows the component parts to be packaged and shipped in a very compact manner as compared to the prior art turntable products. Depending on the design of the prior art turntable, close to 50% of the volume for shipment and storage purposes can be eliminated this way.

[0047] In addition to the foregoing, the methods for fastening the rims to the shelf are not out of the range of abilities for the professional cabinet installer or woodworker, or perhaps even, the average home handyperson. This allows the products to be sold as RTA (ready-to-assemble) items, further reducing the costs of assembly and freight and providing an alternative to competing high-priced wooden turntables at the distributor and retail sales level.

[0048] In an alternate version of the present invention, the usage of pre-formed wood laminates for the rim portion allows wood rims to be applied to solid wood shelves in much the same fashion as discussed above. In this circumstance though, the benefit to the solid wood construction for the shelf is the avoidance of having to rout out much of the inner area of a solid wood blank to provide for a sufficient rim. This is one of the

disadvantages of the prior art that the present invention seeks to avoid, thus the usage of cosmetically compatible pre-formed wood laminates for the rim portion results in some economy and certainly reduces the labor and working necessary to form a turntable shelf.

[0049] The advantages gained in the way the present invention is employed, relate to the ability to manufacture shaped or formed rim segments. The methods for the bending of wood laminates, such as plywood, are well known and have been used to form components for chairs, tables, and even fuselage ribs for aircraft. One method employed, a so-called "wet" method that was promoted extensively by such pioneering designers as Charles and Ray Eames, uses a mold or fixture that allows a thin veneer to be placed in it where it is allowed to conform to the selected shape dictated by the mold. Additional layers are added sequentially, each one being laid up in conformity with the desired shape and with each one being supplied with the adhesive used to make the laminate product, until a completed laminate structure is formed of the desired thickness. In the usual case, the width or length of the molded laminate is extended such that the individually sized segments of product are cut, thus producing the rim segments of the present invention. This process is not the only such method employed to form laminates, there are so-called "dry" methods for the forming and shaping of wood laminates and methods employing steam and pressure to achieve similar, if not the same type of results. The actual method employed is not considered a specific feature of the present invention, although the wet method is the preferred method for forming the segmented rims.

[0050] Variations on the construction of a plywood turntable may be made without necessarily departing from the scope of the present invention. Previously, it has been believed that the usage of plywood for a turntable application would result in an inferior result since the usage of a formed rim had not been investigated and tested, much less a turntable with a segmented plywood rim. The veneers associated with plywood allow for a greater range of appearances in the turntable product as well. The selection of a specific wood for cosmetic purposes is made much more easily with the methods for fabrication of the present invention, including the mimicking of the appearance of a "butcher block" type construction. This liberality was previously impossible to achieve without requiring a highly customized approach.

[0051] The liberality in the design approaches possible with the present invention is not limited to the selection of different wood veneers. The height of the rim has been limited in the past by practical aspects such as the cost of solid wood blanks from which the complete shelf and rim product would have to be formed, or the wastage of a great deal of storage and shipping space for products with taller rims that enclose a great deal of "air" within the confines of the finished turntable. The ability to set and select taller rims would certainly be a factor in applications where tall items are to be stored on the turntable. Even the ability to define differing rim heights between segments is an advancement that would see use in situations where different sized items are being stored on the same turntable, or where there might be cosmetic needs to provide a rim that shields the contents of the turntable from view at times. As may be understood from the specification, where such changes occur in the requirements for the rim, the method for

fastening the rim to the shelf can be modified accordingly so as to provide a secure attachment. All of these variations on the present invention may be realized without departing from the teachings herein.

[0052] Aside from the styles of turntable shelves discussed generally above, it is recognized that some applications have different requirements that can still be improved with the use of the present invention. For instance, a type of Lazy Susan is used in corner cabinets found in the kitchen. In this type of installation the cabinet door is affixed directly to the Lazy Susan shelf and rotates with the whole assembly. This so-called "pie-cut" Lazy Susan is well known and is a very popular style of this product. The usage of a shelf that is made from a wood laminate, i.e., plywood, can be made in an installation of this kind, although the rim does not run along the complete perimeter of the shelf. It is a feature though of the rim component that it can be made to conform to differing configuration and the segments may be tailored compatibly for the pie-cut shape, or for other Lazy Susan shapes for that matter, such as the kidney shape which is not always associated with corner cabinet installations.

[0053] It is understood that the illustrations of the various embodiments for a plywood turntable as disclosed above are meant to be illustrative of the spirit of the invention and do not in any way represent limitations on the scope of the concept or the applications in which it may be used.